<u>Claims</u>

- An apparatus for detecting performance, availability and content deviations in enterprise software applications, comprising:
 - a plurality of data collectors for intercepting messages exchanged between independent services in an enterprise software application; and
- an analyzer for determining a baseline for said enterprise software application and for detecting deviations from said baseline.
 - The apparatus of Claim 1, further comprising:
 a graphical user interface (GUI) for displaying deviations from said baseline in said enterprise software application.
 - 3. The apparatus of Claim 2, said analyzer comprising:

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- a collector manager for controlling said plurality of data collectors;
- a correlation engine (CE) for correlating streams of said messages to a transaction;
 - a statistical processor for collecting real-time statistics on entities within said enterprise software application;
 - a baseliner for determining at least said baseline, wherein said baseline represents a normal behavior of said entities within said enterprise software application;
- a fault prediction and detection engine (FPDE) for performing an early detection of deviations from said baseline in said enterprise software application; and

a presentation and alerts engine for generating reports and alerts for display on said GUI.

4. The apparatus of Claim 3, said analyzer further comprising:

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- an analytic processor for analyzing overall activity of said transactions of said enterprise software application.
- The apparatus of Claim 3, said analyzer further comprising:
 a root cause analyzer (RCA) for automatically providing a detailed analysis of a
 root cause of each fault detected by said FPDE.
- 6. The apparatus of Claim 3, wherein said data collectors capture messages transmitted using communication protocols comprising any of: a simple object access protocol (SOAP); a hypertext transfer protocol (HTTP); an extensible markup language (XML); a Microsoft message queuing (MSMQ);and a Java message service (JMS).
 - 7. The apparatus of Claim 3, said FPDE performing early detection of any of: operation faults (bugs) in said enterprise software application; and decrement in performance of said user enterprise software application.
 - 8. The apparatus of Claim 7, wherein operation faults are detected during production of said enterprise software application.
- 9. The apparatus of Claim 1, said data collectors receiving said messages through an application programming interface (API).
 - 10. The apparatus of Claim 1, wherein said baseline is determined based on any:

content of said messages; context of said messages; and real-time statistics.

- 5 11. The apparatus of Claim 10, wherein said real-time statistics comprise any of:
 - throughput measurements; and average response time measurements of business transactions.
- 10 12. A method for detecting performance, availability and content deviations in enterprise software applications, comprising the steps of:

intercepting messages exchanged between independent services in an enterprise software application;

correlating said messages into a transaction;

determining a baseline for said enterprise software application; and

20 detecting deviations from said baseline.

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- 13. The method of Claim 12, said step of detecting deviations further comprising the step of:

 performing an early detection of any of operation faults (bugs) in said enterprise software application and decrement in performance of said enterprise software application.
 - 14. The method of Claim 13, further comprising the step of: detecting said operation faults during production of said enterprise software application.
 - 15. The method of Claim 12, further comprising the step of: displaying information about any of said operation faults and performance evaluation to a user.

16. The method of Claim 15, wherein said information is displayed to said user through a series of graphical user interface (GUI) views.

- The method of Claim 12, said step of intercepting messages further comprising the step of: receiving said messages through an application programming interface (API).
- 10 18. The method of Claim 12, said step of correlating said messages further comprising the steps of:

assembling messages related to an instance of a transaction;

determining an execution flow graph of a transaction instance;

mapping said execution flow graph with similar transaction instances; and

- grouping said transaction instances to create an execution path that identifies said transaction.
- The method of Claim 12, wherein said baseline is determined based on any of content of said messages, context of said messages, and real-time statistics.
 - 20. The method of Claim 19, wherein said real-time statistics comprise any of: throughput measurements, average response time measurements.
- 21. The method of Claim 12, said method further comprising the step of: performing a root cause analysis to detect a root cause for detected baseline deviations.

22. A computer software product readable by a machine, tangibly embodying a program of instructions executable by said machine to implement a process for detecting performance, availability, and content deviations in enterprise software applications, the method comprising the steps of:

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intercepting messages exchanged between independent services of an enterprise software application;

correlating said messages into at least a business transaction;

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determining a baseline for said enterprise software application; and

detecting deviations from said baseline.

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23. The computer software product of Claim 22, said step of detecting said deviations further comprises the step of:

performing an early detection of any of operation faults (bugs) in said enterprise software application, decrement in performance of said enterprise software application.

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24. The computer software product of Claim 22, further comprising the step of:

displaying information about any of operation faults and performance evaluation to a user.

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25. The computer software product of Claim 24, wherein said information is displayed to said user through a series of graphical user interface (GUI) views.

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26. The computer software product of Claim 22, said step of correlating said messages further comprising the steps of:

assembling messages related to an instance of a transaction;

determining an execution flow graph of a transaction instance;

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mapping said execution flow graph with similar transaction instances; and

grouping said transaction instances to create an execution path that identifies said transaction.

- 10 27. The computer software product of Claim 22, wherein said baseline is determined based on any of content of said messages, context of said messages, and real-time statistics.
- 28. The computer software product of Claim 27, wherein said real-time statistics comprise: throughput measurements, and average response time measurements.
 - 29. The computer software product of Claim 22, said method further comprising the step of:

performing a root cause analysis to detect a root cause for detected baseline deviations.